AMENDMENTS TO THE CLAIMS

This listing of claims shall replace all prior version and listings of claims in the application. Please amend the claims as follows:

Claim 1 (Currently amended): A method of assessing *de novo* fatty acid synthesis in a tissue of an organism, comprising quantifying a marker of *de novo* fatty acid synthesis in a ~~biological~~ fluid sample from the organism, and correlating the quantity of the marker to the level of *de novo* fatty acid synthesis in the tissue, wherein the ~~biological~~ fluid sample is [[a]] blood or a blood product, and wherein the marker of *de novo* fatty acid synthesis comprises:

(a) palmitoleic acid or ~~both~~ the ratio of palmitoleic acid ~~and~~ to palmitic acid quantified from the free fatty acid fraction of the blood or blood product, wherein the method is a method to assess *de novo* fatty acid synthesis in adipose tissue; or

(b) palmitoleic acid or ~~both~~ the ratio of palmitoleic acid ~~and~~ to palmitic acid quantified from the phosphatidylcholine or cholesterol ester fraction of the blood or blood product, wherein the method is a method to assess *de novo* fatty acid synthesis in liver tissue.

Claims 2-7 (Canceled)

Claim 8 (Currently amended): The method of claim 1, wherein the ~~biological~~ fluid sample is a plasma sample.

Claim 9 (Canceled)

Claim 10 (Withdrawn-currently amended): The method of claim 1 wherein the marker of *de novo* fatty acid synthesis is quantified from the free fatty acid fraction of the blood or blood product and the method is a method to assess *de novo* fatty acid synthesis in adipose tissue.

Claim 11 (Currently amended): The method of claim 1 wherein the marker of *de novo* fatty acid synthesis is quantified from the phosphatidylcholine or cholesterol ester fraction of the blood or blood product, and the method is a method to assess *de novo* fatty acid synthesis in liver tissue.

Claim 12 (Currently amended): The method of claim 1, wherein the marker comprises the ratio of ~~comprising quantifying both~~ palmitoleic acid to ~~and~~ palmitic acid in a ~~biological~~ fluid sample from the organism.

Claim 13 (Canceled)

Claim 14 (Currently amended): The method of claim [[13]] 12, wherein the correlating step comprises ~~further comprising~~ comparing the ratio of palmitoleic acid to palmitic acid in a ~~indicator from~~ the ~~biological~~ fluid sample with a ratio indicator from a baseline or control fluid sample.

Claims 15-20 (Canceled)

Claim 21 (Currently amended): The method of claim 1, wherein the method is

(1) a method to determine if a pharmaceutical, nutritional, genetic, toxicological or environmental treatment, regimen or dosage influences *de novo* fatty acid synthesis; or

(2) a method to assess a therapeutic or pharmaceutical agent for its potential effectiveness, efficacy or side effects relating to *de novo* fatty acid synthesis[[; or]].

~~(3) a method to screen individuals for compatibility or incompatibility with a pharmaceutical, nutritional, toxicological or environmental treatment.~~

Claim 22 (Currently amended): The method of claim 1, ~~comprising quantifying~~ wherein the marker of *de novo* fatty acid synthesis is palmitoleic acid ~~in a biological sample from the organism~~.

Claims 23-25 (Canceled)

Claim 26 (Currently amended): The method of claim 1, wherein the method is a method of assessing a change in the *de novo* fatty acid synthesis in the organism, and wherein the method

comprises taking at least two ~~biological~~ fluid samples from the organism, wherein the two fluid samples are taken before and after an event.

Claim 27 (Original): The method of claim 26, wherein the event comprises passage of time, treatment with a therapeutic agent, treatment with a pharmaceutical agent, treatment with a nutritional regimen, treatment with a genetic modification, exposure to a toxic or potentially toxic compound, exposure to an environmental condition, treatment with a laboratory procedure, exercise, or the appearance of a phenotypic state.

Claims 28-31 (Canceled)

Claim 32 (Currently amended): The method of claim [[28]] 27, further comprising comparing the assessment of *de novo* fatty acid synthesis from the organism to an assessment of *de novo* fatty acid synthesis from another organism or compiled for a population of organisms.

Claim 33 (Currently amended): The method of claim [[28]] 27, wherein the quantity of the marker of *de novo* fatty acid synthesis is reported as an absolute or relative concentration.

Claim 34 (Original): The method of claim 33, wherein correlating the quantity of the marker of *de novo* fatty acid synthesis comprises using the absolute or relative concentration of the marker of *de novo* fatty acid synthesis in a mathematical or statistical equation for determining the amount of *de novo* fatty acid synthesis.

Claims 35-60 (Canceled)

Claim 61 (Currently amended): The method of claim 1, wherein the method is a method of assessing an activity of at least one enzyme involved in *de novo* fatty acid synthesis, further comprising correlating the quantity of the marker with the activity of the at least one enzyme.

Claim 62 (Original): The method of claim 1, further comprising generating a printed report.

Claim 63 (Currently amended): The method of claim 11, wherein the marker of *de novo* fatty acid synthesis is quantified from the cholesterol ester fraction of the blood or blood product.

Claim 64 (New): The method of claim 61, wherein the enzyme involved in *de novo* fatty acid synthesis is fatty acid synthase.

Claim 65 (New): The method of claim 61, wherein the enzyme involved in *de novo* fatty acid synthesis is stearoyl Coenzyme A-desaturase.

Claim 66 (New): The method of claim 1, wherein the marker of *de novo* fatty acid synthesis is quantified from the cholesterol ester fraction of the blood or blood product.